

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-104 (canceled)

Claim 105 (previously presented): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a single
5 layer filter media thickness therebetween, said internal structure being between said faces and within said single layer and comprising a trimodal distribution of fiber diameter comprising a first set of fibers in the diameter range 50 to 500 nm, a second set of fibers in the diameter range 1 to 5 μm , and a third set of fibers in the diameter range 10 to 50 μm , wherein in combination said first set of fibers is supported by said second set of fibers, and said second set of fibers is supported by said
10 third set of fibers, said first set of fibers providing said nanofibers, said second and third sets of fibers providing said coarse fibers.

Claim 106 (previously presented): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a single
5 layer filter media thickness therebetween, said internal structure being between said faces and within said single layer and capturing droplets from a liquid to be filtered, said nanofibers being preferentially wetted by said droplets, said coarse fibers being preferentially non-wetted by said droplets, the combination of said wetting and non-wetting nanofibers and coarse fibers, respectively, creating a differential wettability gradient creating a capillary pressure gradient

- 10 wicking droplets off said coarse fibers and facilitating coalescence within and drainage from said internal structure.

Claim 107 (previously presented): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a single
5 layer filter media thickness therebetween, said internal structure being between said faces and within said single layer and capturing droplets from a liquid to be filtered, said coarse fibers being preferentially wetted by said droplets, said nanofibers being preferentially non-wetted by said droplets, the combination of said wetting and non-wetting coarse fibers and nanofibers, respectively, creating a differential wettability gradient creating a capillary pressure gradient
10 wicking droplets off said nanofibers and facilitating coalescence within and drainage from said internal structure.

Claim 108 (currently amended): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a single layer filter
5 media thickness therebetween, said internal structure being between said faces and within said single layer, said nanofibers and said coarse fibers having sufficiently different surface charge characteristics in a filter fluid providing a localized electric field within said internal structure enhancing particle removal from filtered fluid.

Claim 109 (previously presented): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having

5 distally opposite upstream and downstream faces normal to flow therethrough and defining a single
layer filter media thickness therebetween, said internal structure being between said faces and
within said single layer, said nanofibers being concentrated at one of said faces and within said
single layer and having first portions extending parallel to said one face and having second portions
extending normal to said one face, such that said internal structure includes said first nanofiber
10 portions at said one face and within said single layer and includes said second nanofiber portions
continuous with said first nanofiber portions and extending into said internal structure normal to
said one face and increasing attachment strength to said coarse fibers and reducing de-lamination
risk of said nanofibers and reducing pressure drop of fluid flow through said internal structure
within said single layer due to increased orientation of nanofibers in the direction of fluid flow
normal to said one face.

Claim 110 (canceled)

Claim 111 (currently amended): The high performance filter media according to claim 105
wherein said first set of fibers and said second set of fibers form a nanofiber/coarse fiber interface
wherein said nanofibers form bridges across pores between said coarse fibers of said second set all
within said single layer.

Claim 112 (previously presented): The high performance filter media according to claim 105
wherein said first set of fibers and said second set of fibers form a nanofiber/coarse fiber interface
wherein said nanofibers substantially cling onto said coarse fibers of said second set all within said
single layer.

Claim 113 (previously presented): The high performance filter media according to claim 105
wherein said nanofibers of said first set are distributed uniformly throughout said filter media and
within said single layer.

Claim 114 (new): The high performance filter media according to claim 105 wherein said nanofibers are flexible.

Claim 115 (new): The high performance filter media according to claim 105 wherein said nanofibers are polymeric.

Claim 116 (new): The high performance filter media according to claim 105 wherein said coarse fibers are selected from the group consisting of ceramic materials, titania, glass, alumina, and silica; and said nanofibers are selected from the group consisting of polymeric halocarbon, polyester, polyaramid, polyphenylsulfide, acrylic, and nylon.

Claim 117 (new): The high performance filter media according to claim 106 wherein said nanofibers are flexible.

Claim 118 (new): The high performance filter media according to claim 106 wherein said nanofibers are polymeric.

Claim 119 (new): The high performance filter media according to claim 106 wherein said coarse fibers are selected from the group consisting of ceramic materials, titania, glass, alumina, and silica; and said nanofibers are selected from the group consisting of polymeric halocarbon, polyester, polyaramid, polyphenylsulfide, acrylic, and nylon.

Claim 120 (new): The high performance filter media according to claim 107 wherein said nanofibers are flexible.

Claim 121 (new): The high performance filter media according to claim 107 wherein said nanofibers are polymeric.

Claim 122 (new): The high performance filter media according to claim 107 wherein said coarse fibers are selected from the group consisting of ceramic materials, titania, glass, alumina, and silica; and said nanofibers are selected from the group consisting of polymeric halocarbon, polyester, polyaramid, polyphenylsulfide, acrylic, and nylon.

Claim 123 (new): The high performance filter media according to claim 108 wherein said nanofibers are flexible.

Claim 124 (new): The high performance filter media according to claim 108 wherein said nanofibers are polymeric.

Claim 125 (new): The high performance filter media according to claim 108 wherein said coarse fibers are selected from the group consisting of ceramic materials, titania, glass, alumina, and silica; and said nanofibers are selected from the group consisting of polymeric halocarbon, polyester, polyaramid, polyphenylsulfide, acrylic, and nylon.

Claim 126 (new): The high performance filter media according to claim 109 wherein said nanofibers are flexible.

Claim 127 (new): The high performance filter media according to claim 109 wherein said nanofibers are polymeric.

Claim 128 (new): The high performance filter media according to claim 109 wherein said coarse fibers are selected from the group consisting of ceramic materials, titania, glass, alumina, and silica;

and said nanofibers are selected from the group consisting of polymeric halocarbon, polyester, polyaramid, polyphenylsulfide, acrylic, and nylon.

5 Claim 129 (new): High performance filter media comprising nanofibers of diameter less than 1 μm incorporated and processed into internal structure of a filter medium dominantly composed of coarse fibers of diameter greater than 1 μm , said filter media having distally opposite upstream and downstream faces normal to flow therethrough and defining a single layer filter media thickness therebetween, said internal structure being between said faces and within said single layer, said nanofibers and said coarse fibers are provided by first and second fiber types of different materials far enough apart in the triboelectric series to produce a charge when used together and having different surface charge characteristics providing a localized electric field within said internal structure enhancing particle removal from filtered fluid.

Claim 130 (new): The high performance filter media according to claim 129 wherein said nanofibers are flexible.

Claim 131 (new): The high performance filter media according to claim 129 wherein said nanofibers are polymeric.

Claim 132 (new): The high performance filter media according to claim 129 wherein one of said first and second fiber types is selected from the group consisting of nylon, polyaramid, and cellulose; and the other of said first and second fiber types is selected from the group consisting of acrylic, polyester, polypropylene, and polymeric halocarbon.